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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,737	09/26/2003	Wen-Jian Lin	Q77680	6758

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EXAMINER	
IVEY, ELIZABETH D	

ART UNIT	PAPER NUMBER
1775	

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/670,737	LIN ET AL.	
	Examiner	Art Unit	
	Elizabeth Ivey	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

(1) On page 7 lines 1-9 applicant discloses embodiment 1. On line 6, specification states "These two electrodes are supported by posts 308, and a cavity 310 is then formed." Specification omits mention of support post 306, although it refers to plural posts in formation of cavity 310. Appropriate correction is required.

(2) On page 7 line 24-page 8 line 3 the statement "Moreover, adjusting the manufacturing parameters to produce a substrate with disordered lattice makes various axes in every part of the substrate is another method to decrease the transparency of the substrate..." is incomprehensible as written. Examiner respectfully requests revision of this sentence. Appropriate correction is required.

(3) On page 8 line 22 of the specification, applicant states "The lattice is disordered and the axes of each are different". It is unclear to what lattice and axes this statement refers and from what they are different. Appropriate clarification is required.

(4) On page 8 line 12 and page 9 line 7 of the specification, applicant references "modulation 300". Other than these references, examiner finds no modulation 300 indicated in the

specification or the drawings and it is unclear what is meant by this phrase. Appropriate clarification is required.

(5) On page 9 line 22 the word ever should be every. Appropriate correction is required.

Claim Objections

Claims 8-12, 19 and 20 are objected to because of the following informalities: Regarding Claim 8-12, although independent claim 7 claims two transparent conductive and two dielectric layers, dependent claims 8-12 refer to "the" transparent conductive or "the" dielectric layer as though there were only one layer of each type. Considering this verbiage, the implication is that one of the layers of the intended type possesses the characteristic but the claims do not specify which one. For purposes of furthering prosecution, examiner takes the position that all layers of either transparent conductive or dielectric material exhibit the claimed characteristic. Appropriate correction is required.

Regarding claims 12 and 20, claim " The structure of claim 7" or "the structure of claim 13". Because claims 7 and 13 do not discuss a structure, examiner respectfully requests rewording of claims 12 and 20 to claim "the optical interference display of claim..." for consistency Additionally, regarding claim 20, the word comprises should be in the singular form of comprise. Appropriate correction is required.

Regarding claims 16-17, The claim states "wherein the lattice of the first conductive transparent layer and the second conductive transparent layer is different" Examiner respectfully requests a rewording of the claim to clarify that the lattice of the first conductive transparent layer and the second conductive transparent layer are different from one another.

Regarding claims 18 and 19, the word "is" at the end of each of the claims should be "are" and the second occurrence of "is different" should be deleted from each claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 16 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The way in which the

lattices are made different from one another is not disclosed in such a way as to enable one skilled in the art to create lattices different from one another, therefore the lattices of the conductive transparent layers being different from one another is not enabled by the disclosure.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 11, 12, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 5, 11, 18 and 19, in claims 5 and 11 the applicant claims "wherein axes of every part of the conductive transparent layer are different. In claim 18 the applicant claims "wherein axes of the first conductive transparent layer and the second conductive transparent layer is different" and in claim 19 the applicant claims "wherein axes of the second conductive transparent layer and the third conductive transparent layer is different" The specification does not define or elaborate on what constitutes the axes of the conductive transparent layer and examiner cannot determine a possible meaning from prior art or specification. The meaning of the claim is therefore unclear and examiner respectfully requests it be restated or further defined.

Regarding claim 12, claim 12 states "wherein the conductive transparent layer further comprises". Because there is more than one conductive transparent layer in the display of claim

7 it is unclear which layer is indicated. For purposes of furthering examination, examiner takes the position that all conductive transparent layers have more than 100ppm impurity.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 4,590,128 to Kawai.

Regarding claims 1-3, Kawai discloses a thin film EL element, which is an optical interference element commonly used for display purposes, comprising a conductive transparent layer of ITO, indium oxide or doped indium oxide and a layer which may comprise Si_3N_4 or SiO_2 or metal oxides such as TiO_2, Y_2O and Al_2O_3 which are dielectric materials (column 2 lines 20-25 and column 4 lines 39-48). Kawai does not disclose 30% absorption of incident light by

the conductive oxide layer having a particular thickness but he does disclose an ITO film thickness of 2000 angstroms (column 2 lines 22-23) and a corresponding preferable transmittance of 10 to 70% and wavelength dispersion of transmittance of $\pm$ 10% (column 4 lines 24-28), allowing for an absorption of 30% or more. Because discovering an optimum value of a result effective variable such as thickness involves only routine skill in the art, In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), because a chemical composition and its properties are inseparable, *MPEP 2112.02*, and because the prior art exemplifies the applicant's claimed composition in relation to the transparent conductive film, the claimed physical property relating to the percent absorption is inherently present in the prior art. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to optimize the thickness of the film, making the claimed physical property relating to the percent absorption inherently present in the prior art achieve the desired percent absorption of the layer as claimed. For this reason, the addition of the claimed physical property to the claim language fails to provide patentable distinction over the prior art.

Regarding claim 4, although Kawai does not disclose the lattice of the conductive transparent layer to be disordered, he does disclose the identical compositions deposited by sputtering column 4 (column 2 lines 20-25 and column 4 lines 39-48). Because a chemical composition and its properties are inseparable, *MPEP 2112.02*, and because the prior art exemplifies the applicant's claimed composition and application method in relation to the transparent conductive film, the addition of the claimed physical property to the claim language fails to provide patentable distinction over the prior art.

Regarding claim 6, Kawai discloses a W impurity added to In_2O in the conductive transparent layer (column 4 lines 44-46). Although Kawai does not disclose more than 100ppm impurity, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the impurity level for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 4,590,128 to Kawai.

Regarding claims 7-9, Kawai discloses a thin film EL element, which is an optical interference element commonly used for display purposes, comprising a conductive transparent layer of ITO, indium oxide or doped indium oxide and a layer which may comprise Si3N4 or SiO2 or metal oxides such as TiO_2, Y_2O and Al_2O_3 which are dielectric materials (column 2 lines 20-25 and column 4 lines 39-48). Kawai does not disclose 30% absorption of incident light by the conductive oxide layer having a particular thickness but he does disclose an ITO film thickness of 2000 angstroms (column 2 lines 22-23) and a corresponding preferable transmittance of 10 to 70% and wavelength dispersion of transmittance of $\pm$ 10% (column 4 lines 24-28), allowing for an absorption of 30% or more. Because discovering an optimum value of a result effective variable such as thickness involves only routine skill in the art, In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), because a chemical composition and its properties are

inseparable, *MPEP 2112.02*, and because the prior art exemplifies the applicant's claimed composition in relation to the transparent conductive film, the claimed physical property relating to the percent absorption is inherently present in the prior art. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to optimize the thickness of the film, making the claimed physical property relating to the percent absorption inherently present in the prior art achieve the desired percent absorption of the layer as claimed. For this reason, the addition of the claimed physical property to the claim language fails to provide patentable distinction over the prior art. Although Kawai does not disclose a second set of conductive transparent and dielectric layers, it would have been obvious to one having ordinary skill in the art to duplicate the layering to achieve the same result since applicant shows no evidence of a new or unexpected result from the duplication of the layers *In re Harza, 274F .2d 669, 124 USPQ 378 (CCPA 1960).*

Regarding claim 10, although Kawai does not disclose the lattice of the conductive transparent layer to be disordered, he does disclose the identical compositions deposited by sputtering (column 2 lines 20-25 and column 4 lines 39-48). Because a chemical composition and its properties are inseparable, *MPEP 2112.02*, and because the prior art exemplifies the applicant's claimed composition and application method in relation to the transparent conductive film, the addition of the claimed physical property to the claim language fails to provide patentable distinction over the prior art.

Regarding claim 12, Kawai discloses a W impurity added to In2O in the conductive transparent layer (column 4 lines 44-46). Although Kawai does not disclose more than 100ppm impurity, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the impurity level for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 4,590,128 to Kawai.

Regarding claims 13-15, Kawai discloses a thin film EL element, which is an optical interference element commonly used for display purposes, comprising a conductive transparent layer of ITO, indium oxide or doped indium oxide and a layer which may comprise Si3N4 or SiO2 or metal oxides such as TiO_2, Y_2O and Al_2O_3 which are dielectric materials (column 2 lines 20-25 and column 4 lines 39-48). Kawai does not disclose 30% absorption of incident light by the conductive oxide layer having a particular thickness but he does disclose an ITO film thickness of 2000 angstroms (column 2 lines 22-23) and a corresponding preferable transmittance of 10 to 70% and wavelength dispersion of transmittance of $\pm$ 10% (column 4 lines 24-28), allowing for an absorption of 30% or more. Because discovering an optimum value of a result effective variable such as thickness involves only routine skill in the art, In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), because a chemical composition and its properties are inseparable, *MPEP 2112.02*, and because the prior art exemplifies the applicant's claimed

composition in relation to the transparent conductive film, the claimed physical property relating to the percent absorption is inherently present in the prior art. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to optimize the thickness of the film, making the claimed physical property relating to the percent absorption inherently present in the prior art achieve the desired percent absorption of the layer as claimed. For this reason, the addition of the claimed physical property to the claim language fails to provide patentable distinction over the prior art. Although Kawai does not disclose a second and third sets of conductive transparent and dielectric layers, it would have been obvious to one having ordinary skill in the art to triple the layering to achieve the same result since applicant shows no evidence of a new or unexpected result from the multiplication of the layers *In re Harza, 274F .2d 669, 124 USPQ 378 (CCPA 1960).*

Regarding claims 16-19, a chemical composition and its properties are inseparable. *MPEP 2112.02.* Because the prior art exemplifies the applicant's claimed composition in relation to the sputtered films, and because there is no indication of any efforts made to create the different lattices and axes, the claimed physical properties relating to the layers lattices and axes are inherently present in the prior art. Therefore, the addition of the claimed physical property to the claim language fails to provide patentable distinction over the prior art.

Regarding claim 20, Kawai discloses a W impurity added to In_2O in the conductive transparent layer (column 4 lines 44-46). Although Kawai does not disclose more than 100ppm impurity, it would have been obvious to one having ordinary skill in the art at the time of the

invention to adjust the impurity level for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Ivey whose telephone number is (571)272-8432. The examiner can normally be reached on 7:00- 4:30 M-Th and 7:00-3:30 alt. Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571)272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth D. Ivey

Elizabeth D. Ivey

DEBORAH JONES
SUPERVISORY PATENT EXAMINER